

Residential Recycling in Wisconsin: 1990 – 2006

Preliminary survey results

Introduction

Since 1990 the Wisconsin Department of Natural Resources (DNR) has sponsored nine periodic telephone surveys to track the progress of residential recycling in Wisconsin. This report presents the results of the most recent (2006) survey of the state's residents and their recycling practices. It also includes selected data from prior surveys. Residents' responses to these surveys show the progress the program has made in the sixteen years since its inception. Community recycling programs have been established and state residents have responded with enthusiasm. The recycling of household wastes is likely one of the most popular and visible environmental programs in the state.

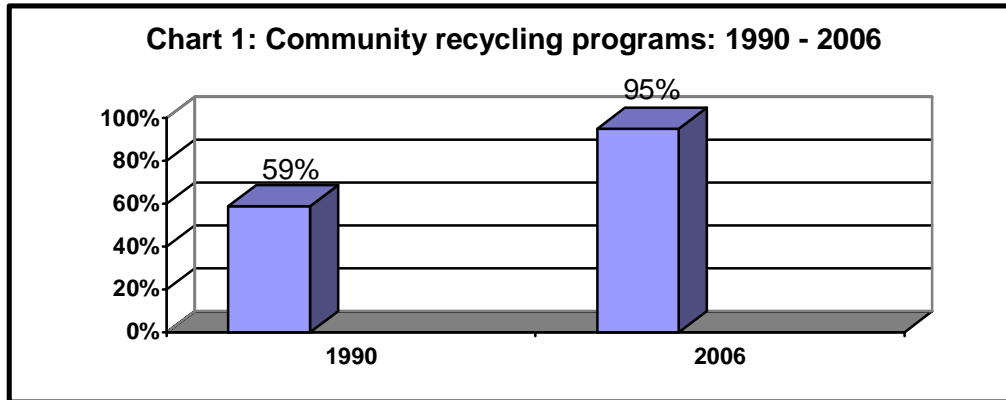
Data Collection

This report draws its data from statewide telephone surveys. The 2006 survey of household recycling relies on the responses of 555 state residents. The University of Wisconsin Survey Center created the sample, conducted the interviews, and performed the data entry. The results are accurate to plus or minus five percent.

Growth of community programs

Under Wisconsin law, all communities are required to have a recycling program and to make provisions that allow residents of single family and two and four unit dwellings to recycle. Chart 1 presents the proportion of the state's residents who report that their community provides such a program.

In 2006, ninety-five percent of the state's residents believed that their community had such a program in place. In 1990, about three-fifths (59%) of the state's residents reported the presence of a community recycling program.



Question: *Does your community have a recycling program?*

Observation: Clearly the breadth of the state's recycling program has increased significantly over the past sixteen years. This is a percent difference of 36 percent and a percent *change* of 61 percent.

Household participation in recycling

There has been a significant increase in the depth of the state's recycling programs. The public not only has greater access to recycling programs, they report that they are recycling more items.

Table 1: Items households recycle 1990 - 2006

Item	1990	2006
Newspapers	56%	80%
Other paper	15	58
Magazines	--	75
Cardboard	19	79
Aluminum cans	80	89
Other metal cans	27	92
Glass	46	89
Plastic	39	88

Observations: There has been a significant increase in the items that households report recycling.

In 1990, not a single household reported recycling magazines. In 2006, seventy-five percent report that they recycle magazines. Significant increases are noted in the categories of other paper, cardboard, other metal cans, glass and plastics.

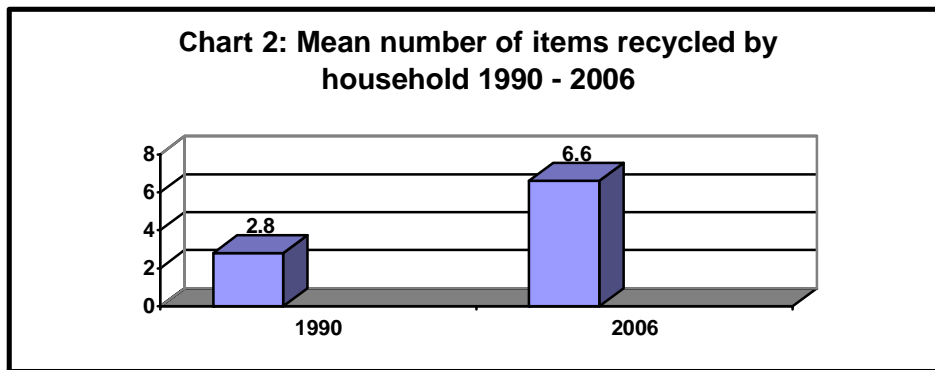
Seventeen percent of households report that they pay to have their recyclables collected.

Thirty one percent report that they receive cash for some of the items (typically aluminum) that they recycle.

Changes in recycling

There has been a substantial increase in the number of items each household recycles.

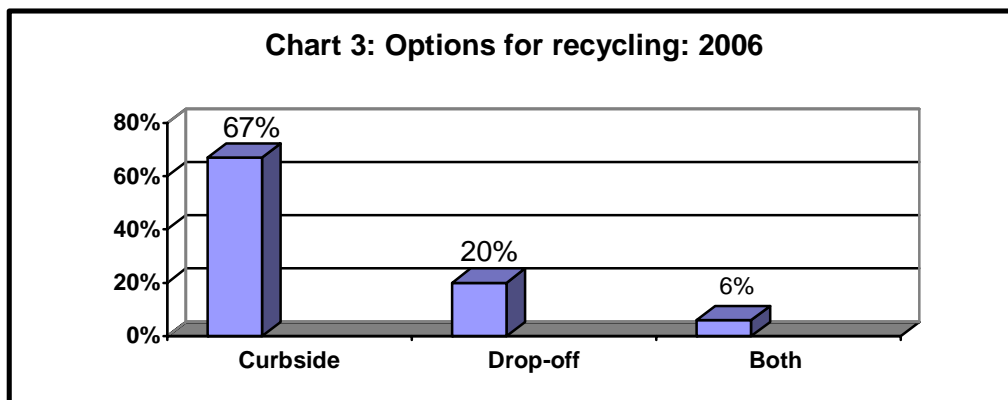
Chart one shows how the number of items recycled by each household has changed over the past sixteen years. The number of items recycled by the typical household has more than doubled since 1990.



Observations: In 1990, the typical Wisconsin household recycled two things: newspapers and aluminum cans. A few of the more ardent recyclers also recycled glass. By 2006, these households had added glass, plastics, metals, mixed paper and magazines.

Options for household recycling

In 2006, a large majority of the state's households had the option to take their recyclables to the curb.

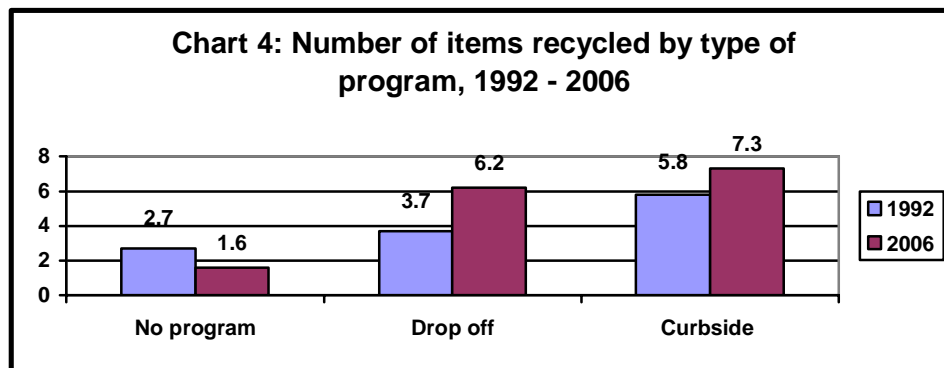


Observations:

In 2006, more than two-thirds of Wisconsin's residents (67%) report that they recycle by taking their items to the curb. Only one household in five takes their recyclables to a drop-off location only.

Curbside programs still gather more recyclables than drop-off programs

Chart four shows the significance of the type of program for households' participation in recycling. Those with curbside recycling report recycling slightly more items than those who have to take their recyclables to a drop-off site. Those with curbside collection report recycling 7.3 items; those who rely on drop-off sites report recycling 6.2 items.



In 1992, the disparity between the type of collection and the number of items recycled was greater. At that time, those who took their items to a drop-off location recycled just 3.7 items while those with curbside collection reported recycling 5.8 items. Those with no program recycled just 1.6 items.

Other changes in household recycling

Participants in these surveys were asked whether they were recycling more or less than they did in the two years preceding the survey. In 1991, nearly two-thirds of those surveyed replied that they were recycling "more." By 2006, only twenty-eight percent gave the same response (Table 2).

Table 2: Perceptions of changes in the volume of household recycling: 1991 – 2006.

	1991	2006
More	64%	28%
Same	19	60
Less	4	12
Not recycling	14	--

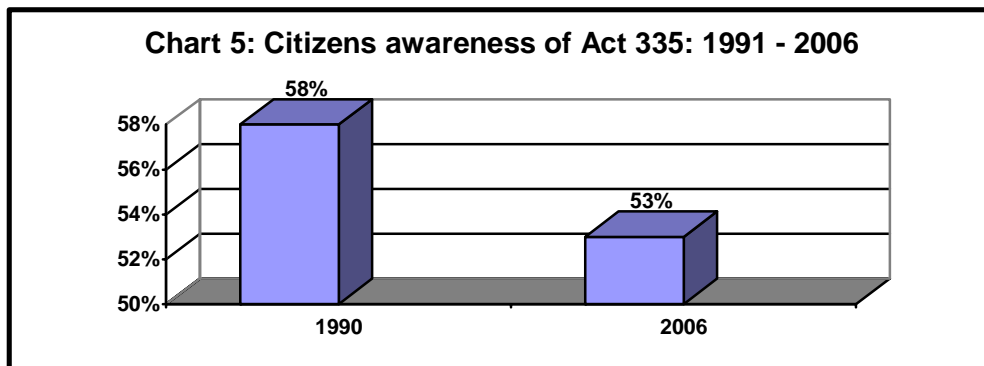
Question: Are you recycling more, less or the same as two years ago?

Observation: Responses to this question reflect the maturation of the state's recycling program. In 1991, the program was just beginning and people were just starting to have the opportunity to recycle. By 2006, the program had matured and many households are recycling most or all of the banned items (table 1).

SECTION II: Support for, and commitment to, Wisconsin's recycling program.

Awareness of Act 335: Wisconsin's Recycling Law

.Awareness of this Act has declined somewhat since the inception of the law. A bare majority – fifty-three percent -- have heard of Act 335. In 1990, fifty-eight percent said that they had heard of this law.



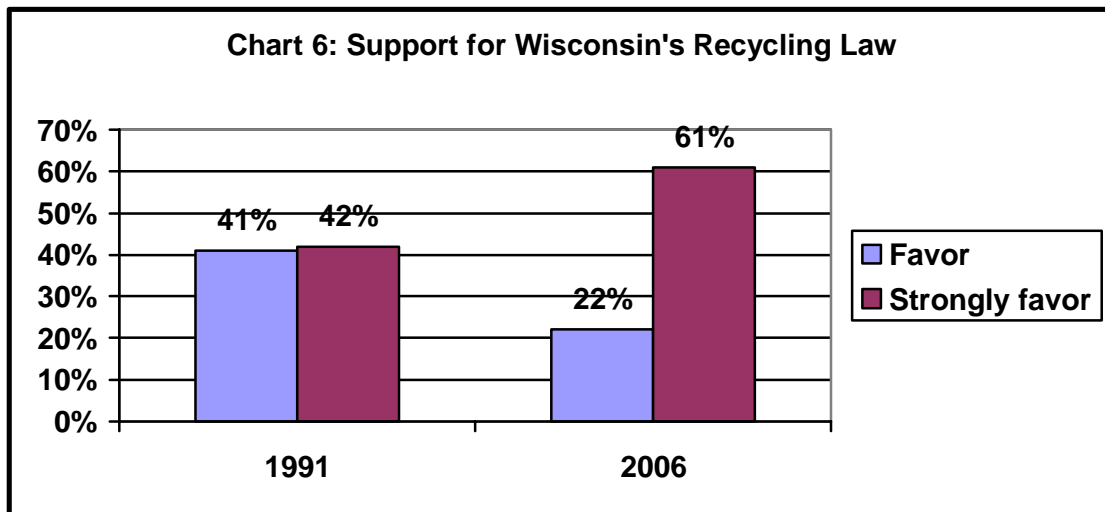
Question: In 1990, Wisconsin passed a law that required local communities to make provisions for recycling such trash as glass bottles, aluminum cans, and newspapers by 1995. Were you aware of the passage of this law?

Support for Wisconsin's Recycling Law

Wisconsin's residents overwhelmingly and strongly support the state's household recycling law.

In 1991, eight out of ten state residents said that they supported the state's recycling law. In 2006, respondents voiced the same level of support for the

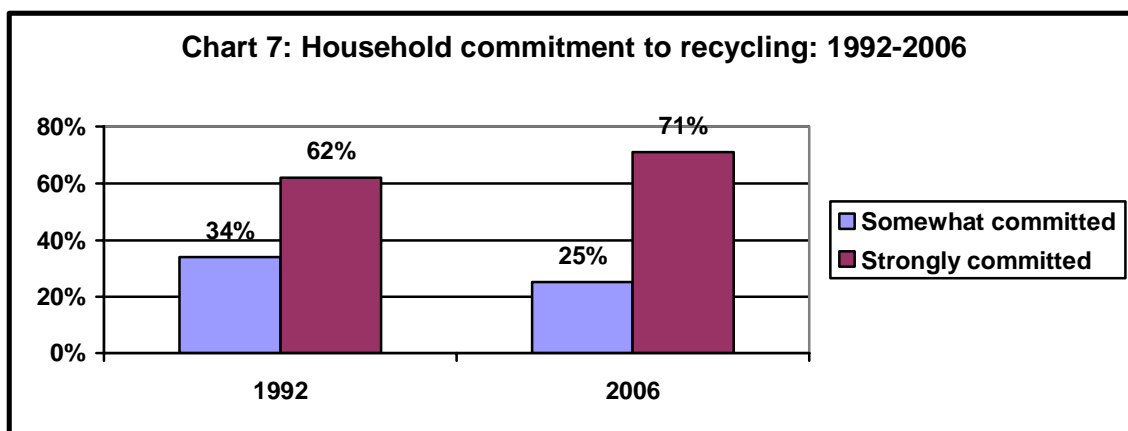
law. Note, however, that in 2006 the proportion of residents who said that they “strongly favored” the law had increased by nearly twenty percent. By 2006, however, a much larger proportion of respondents said that they “strongly favored” the law. Only four percent report that they are opposed to the law that mandates recycling. In 1991, approximately nine percent of those surveyed opposed the law.



Question: How do you feel about the state law governing recycling?

Household commitment to recycling

Wisconsin residents say that they are strongly committed to recycling. If anything, their level of commitment to this activity has increased since the program first started.



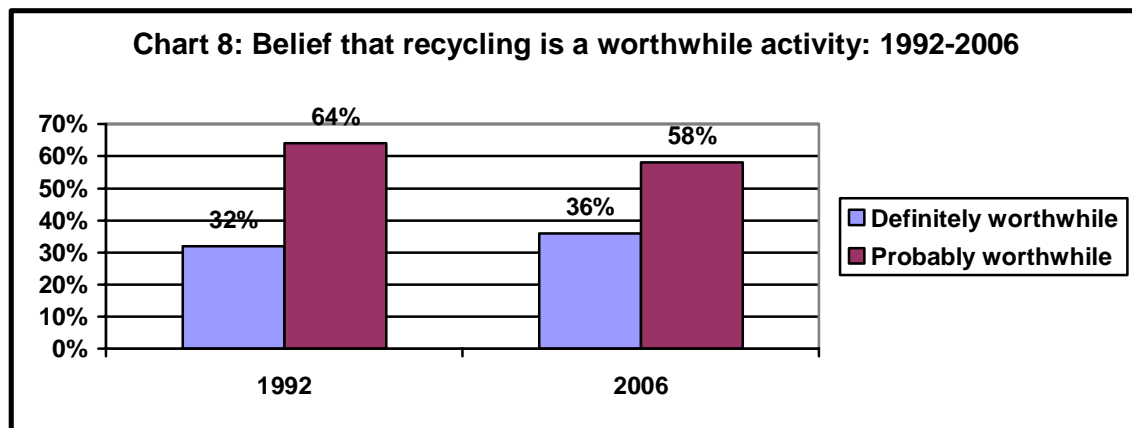
Question: Which if the following best describes your household's commitment to recycling its waste?

Observations:

In 1992, when this question was first asked, three-fifths of the state's households described themselves as "strongly committed" to recycling. By 2006, the percentage of the state's residents having that level of commitment increased to seventy-one percent. Only three percent of Wisconsin's residents say that they have no commitment to recycling.

Belief that recycling is a worthwhile activity

A strong majority of the state's residents believe that recycling is worth the effort that they put into it (Chart 8).



Question: Relative to the amount of effort you put into recycling, do you feel your effort is definitely worthwhile, probably worthwhile, probably not worthwhile, or definitely not worthwhile?

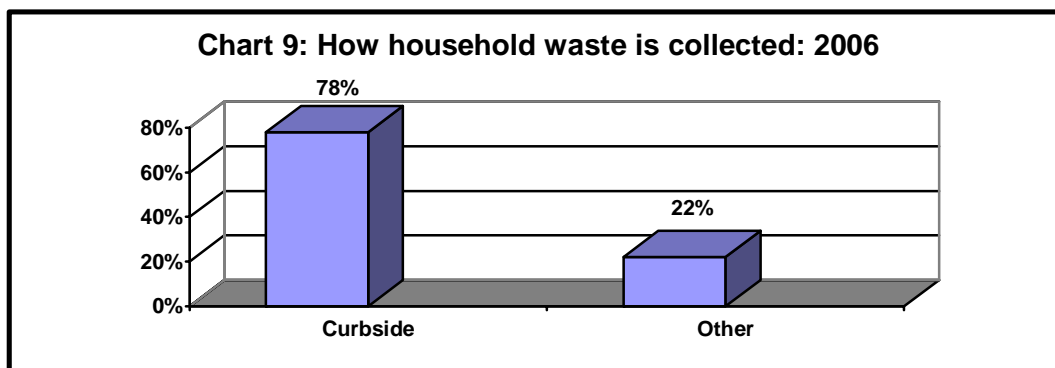
Observations:

Nine out of ten residents both surveys agreed that recycling was worth the effort. Some doubt, however, may have crept in about the utility of recycling. Fewer people in 2006 described this activity as "definitely" worthwhile.

SECTION II: Household Trash Disposal

This section of the report examines how household dispose of their household waste.

A majority of the state's household take their trash to the curb where it is collected by their local government.



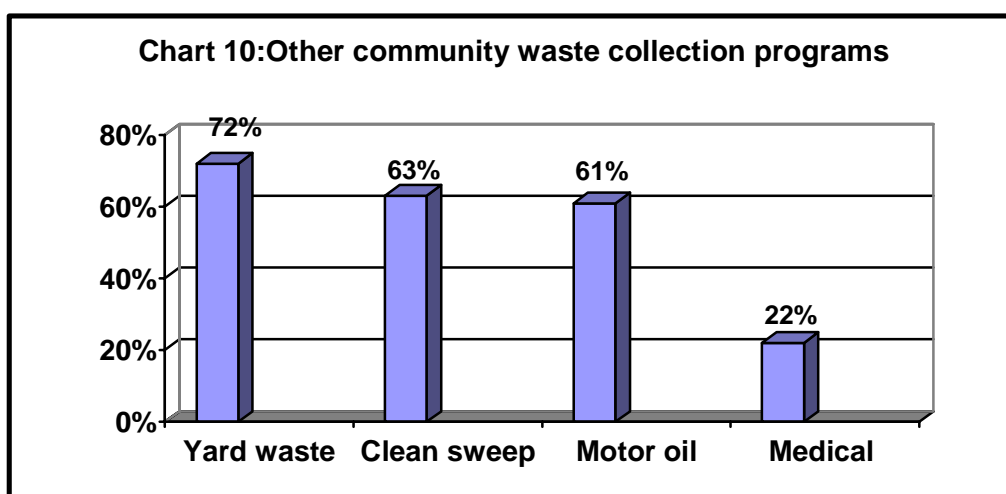
Question: Do you take your trash to the curbside for pickup or not?

Observations: More than three quarters (78%) of the state's residents take their trash to the curb for collection.

Once it's at the curb, it's most often collected by the municipality. Two-thirds of those with curbside collection say that the municipality hauls their trash away; the remaining third rely on a private hauler. A majority of those who rely on a private hauler (63 percent) pay a fee for that service. In most cases (70 percent) they pay a flat fee for the collection of trash. Only one-third report that the amount they pay varies according to the quantity of trash they set out on the curb.

Other waste collection programs

In addition to collecting regular recycling materials, communities make provisions to collect other types of waste as well. This includes yard waste, household hazardous waste, motor oil, and even medical waste.

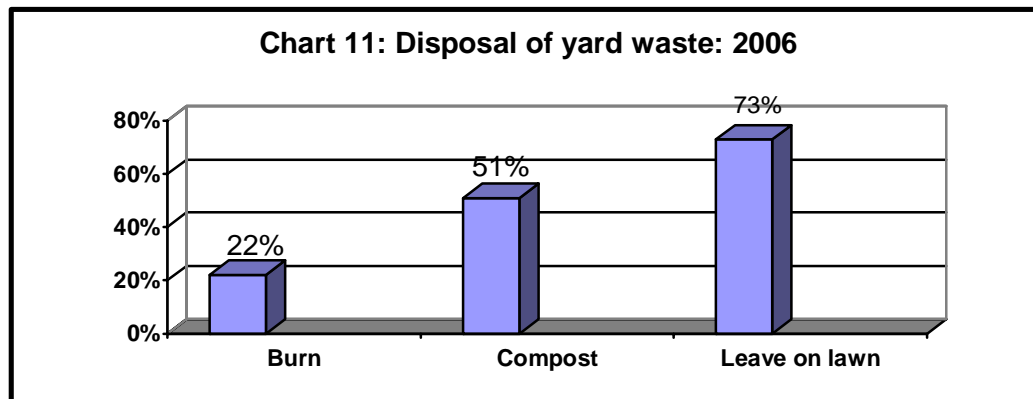


Observations: A majority of respondents report that their communities collect yard wastes (72%), household hazardous wastes (63 percent), and motor oil

(61 percent). Some also provide for the collection of medical wastes (22 percent).

Yard Waste

The vast majority of those surveyed (88 percent) have yards and generate a quantity of yard waste. Their strategies for disposing of that yard waste vary.



Observation: Households have multiple strategies for coping with their yard waste. Only a minority of households with yards (22 percent) report burning any yard waste. Others say that they compost it (51 percent) or simply leave it on the lawn (73 percent). As noted earlier in the report, a majority of respondents (81 percent) report that their community either collects or provides drop-off sites for yard waste.

Data from prior surveys on the burning of yard waste

Percent of households that report burning a portion of their yard waste:

- 2002 survey: 18%
- 1998 survey: 12%
- 1995 survey: 17%
- 1994 survey: 13%
- 1993 survey: 14%

NOTE: There appears to be an increase in the proportion of households that burn yard waste. The 2006 survey shows the highest rate of burning of any of the surveys (22 percent).

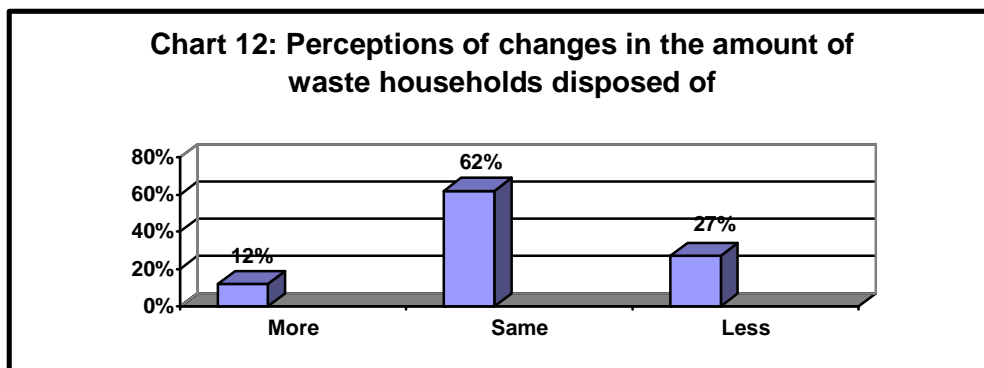
Burning trash

It should be noted that only a handful of households in this study reported that they burned their trash. Three percent of those surveyed (seventeen

cases) said that they burned their trash. All but two of these respondents said that they were unconcerned about any threats to their health from burning trash. However, it is difficult to draw any firm conclusions from such a small sample.

Perceptions of changes in volume of trash

Reducing the volume of household waste has been a long running goal of the recycling program. About a quarter of the households surveyed (twenty-seven percent) say that they are putting less waste out on the curb than they did two years ago.

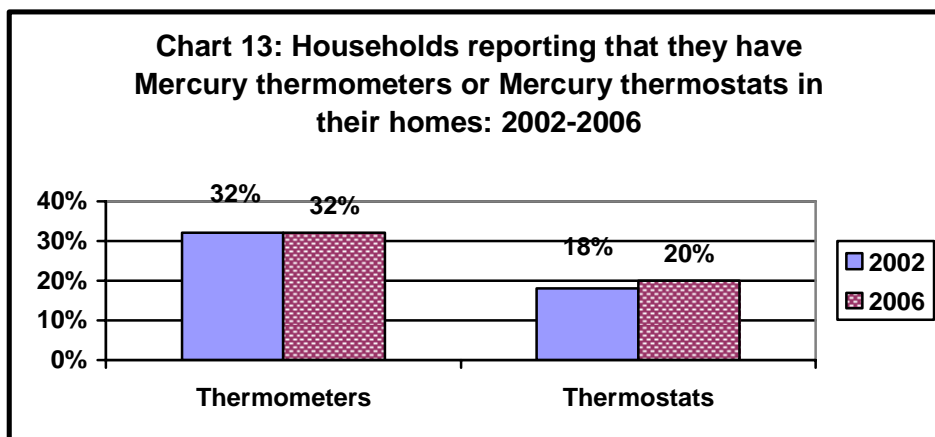


Observation: Most households (62 percent) say that they're disposing of the same amount of waste as they did two years ago. One quarter (27 percent) feel that they're throwing away less and one household in ten says that they are throwing away more.

Issues related to Mercury

A majority of respondents report that they have neither mercury thermometers nor furnace thermostats that contain mercury in their homes.

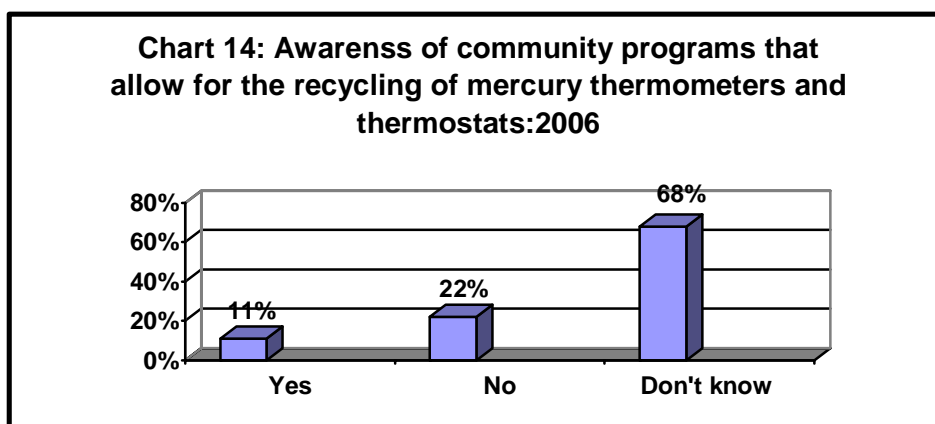
Chart 13 shows the proportion of households that report that they have either mercury thermostats or mercury thermometers. Nearly one-third (32 percent) report that they have one or more thermometers; one-fifth report the presence of mercury thermostats.



Questions: Do you have any mercury thermometers in your home that contain mercury? Do you have any furnace thermostats in your home that contain mercury?

Opportunities for recycling thermometers and thermostats

Most people don't know whether or not their community provides for the recycling of thermometers and thermostats.



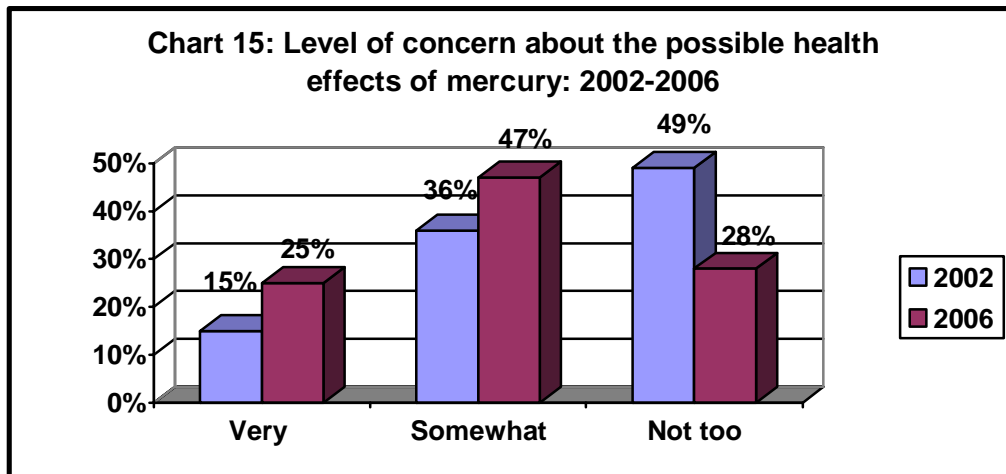
Question: Does your community have a program to recycle mercury products at the end of their useful life?

Observation:

Approximately one person in nine (11 percent) reports that there is a program in their community that allows them to recycle products containing mercury. More than two-thirds (68 percent) don't know if such a program exists.

Concerns about the health effects of mercury

Respondents have a modest degree of concern about the possible health risks of mercury. One-quarter of those surveyed in 2006 pronounced themselves “very concerned” about the health effects of mercury compared to 15% in 2002. The number that said they were somewhat concerned rose to 47%, up from 36%.



Question: Some people are concerned about the effects of mercury on the environment and on health. Please tell me how concerned you are about mercury.

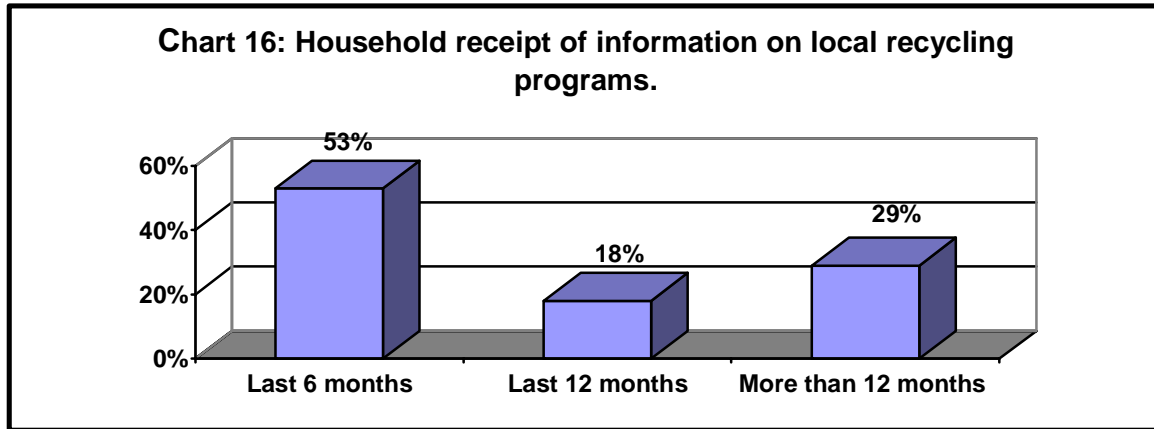
The message about the dangers of mercury seems to be taking effect. While 51% said they were ‘very concerned’ or ‘concerned’ in 2002, 72% said they were ‘very concerned’ or ‘concerned’ in 2006.

SECTION III: Information on recycling

Households should receive information from the local entities responsible for household recycling.

Receiving information on recycling

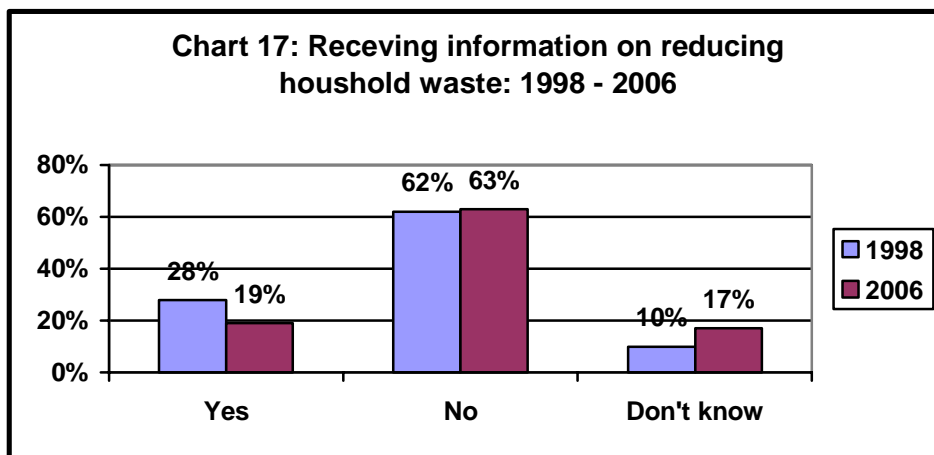
About half of the state’s households report that they received at least some information on recycling in the six months preceding the survey. Nearly a third (29 percent) say that it has been more than a year since they have received such information.



Question: When would you say you last received information on your local recycling program.

Information on waste reduction

Wisconsin's residents receive little information on how to reduce household waste.



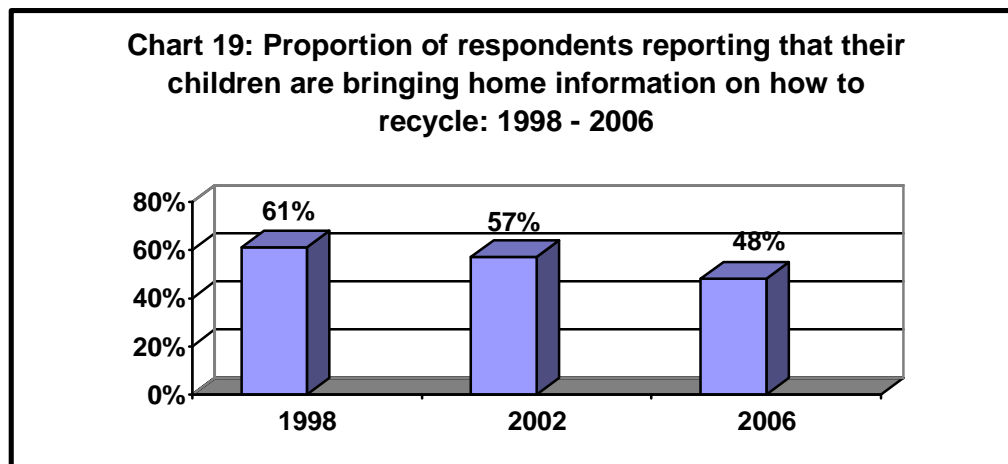
Question: Does your community provide information on how you might reduce the amount of garbage you produce?

Observation:

Most programs focus on recycling, not waste reduction, and their education efforts reflect that fact.

Children and the provision of recycling information

One strategy for reaching parents has been to educate children about recycling and to provide them with information that they can then take home to their parents. The proportion of parents reporting that their children bring home such information has declined since 1998.



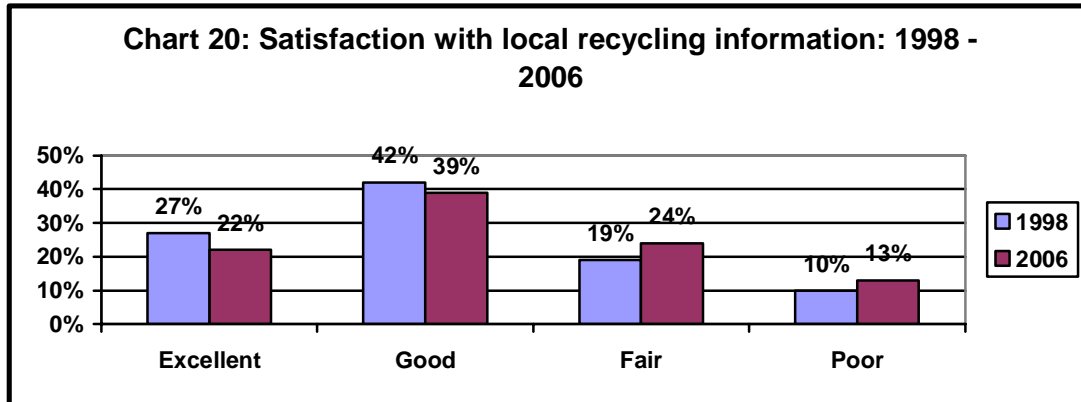
Question: Does your school age child bring home information from school about recycling?

Observation:

In 1998, three-fifths of parents reported that their child brought home information from school on how to recycle. Between 1998 and 2002 there was a modest decline in the proportion of children bringing information home. By 2006, less than half (48%) reported that their children were bringing recycling information home. This could mean that the strong emphasis on education in the early '90s has paid off. Recycling is now ingrained in Wisconsin and is part of the daily routine for families and reinforced by other organizations, from non-profit groups to businesses. DNR has also, through education programs such as Green and Healthy Schools, broadened the learning opportunities in schools to go beyond recycling into environmental quality improvements that benefit health as well as save money and energy.

Satisfaction with recycling information

Citizens' satisfaction with the information they received on local recycling has declined since 1998.

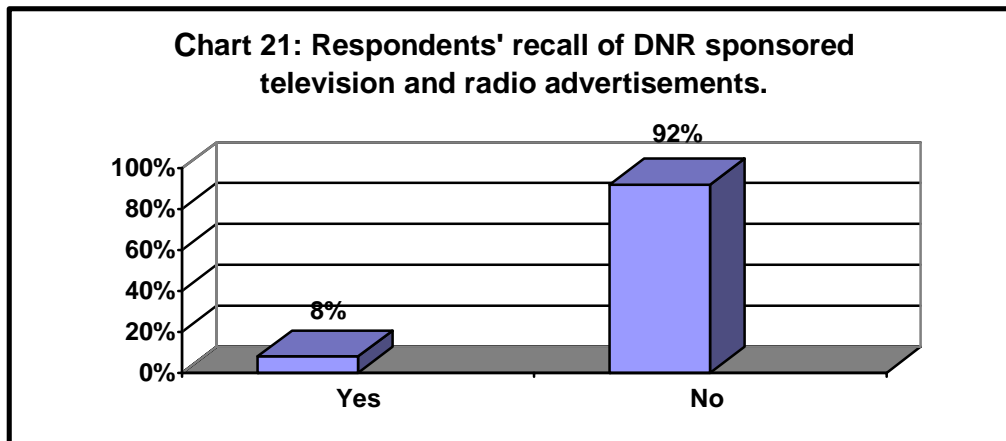


Question: How good a job would you say your local recycling program has done in the last year in telling you how to recycle in your area?

Observation: In 1998, nearly seventy percent of those surveyed rated the information they received on recycling from their local programs as "excellent" or "good." In 2006, however, only sixty-one percent gave that same rating.

Awareness of DNR information campaigns

Respondents have little recollection of informational campaigns sponsored by the DNR.



Question: This past summer the DNR sponsored radio and television ads featuring a recycling hunter. The ads explained how to recycle while away from home and ended with the tag line "recycle away." Do you recall seeing or hearing such ads?

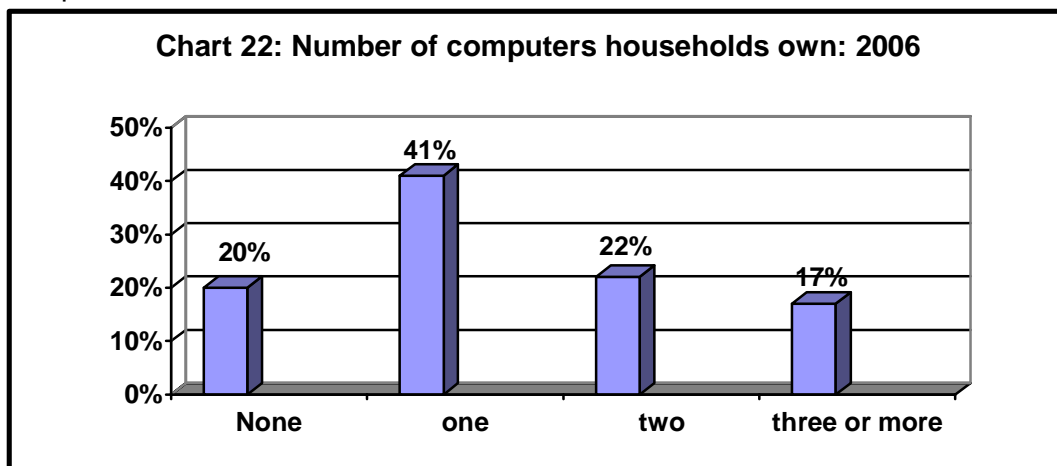
Observation: Taken as a whole, it's clear that stand-alone messages have not been repeated often enough nor have they reached a wide enough audience to be effective. The DNR should consider a comprehensive multi-media campaign working in conjunction with local municipalities and non-profit groups.

SECTION IV: Electronic Waste

Electronic waste comprises old computers, televisions, cell phones and other electronic devices that households throw away. This section examines the inventory of such items that households have and how they say they dispose of them.

Computers

The vast majority of the state's households contain one or more personal computers.



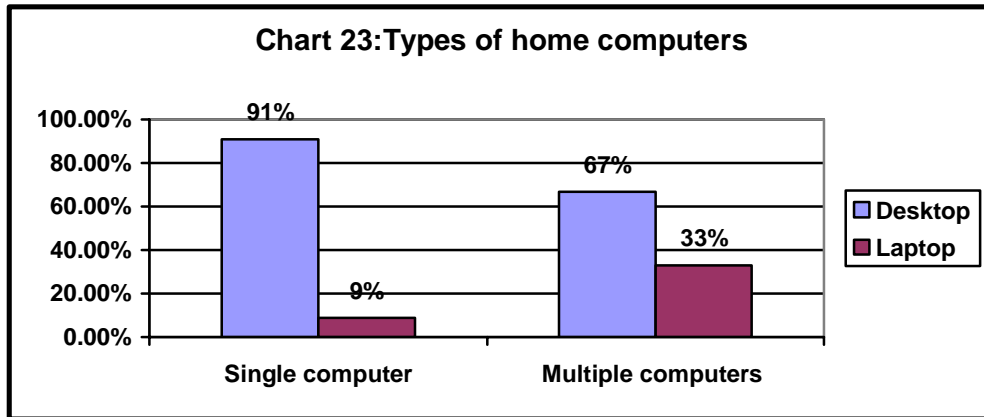
Observations: Only one household in five reports that it does not own a computer. The majority of households (41 percent) report that they own a single computer. Nearly two-fifths of the Wisconsin's households (39%) have two or more computers in their homes. The non-existent "average" household in Wisconsin contains 1.5 computers.

Note: There are no differences in computer ownership by residence: those who live in rural areas are just as likely as urban dwellers to report owning a computer. Those who live in rural areas report an average of 1.54 computers in the home compared with 1.51 for those who report living in a more urban setting. Computer ownership does, however, vary according to age, income, education and employment. Those who are employed, better educated, younger, with higher incomes are more likely to report owning one or more computers. This set of attributes also aligns with positive attitudes and behavior as they relate to the environment and recycling. People with these attributes are generally more concerned about the environment and disposed to engage in environmentally responsible behaviors. In particular, they should be predisposed to make environmentally responsible decisions when the time comes to dispose of a computer, television or cell phone.¹

¹ See Table 1 in appendix one for a summary of these attributes and computer ownership. The connection between these attributes and environmental behavior documented in the classic article. VanLiere, K.D. and R.E. Dunlap (1980) "The social bases of environmental concern: a review." *Public Opinion Quarterly* 44:181-197.

Computers in the home

The desktop computer is the household computer of choice.

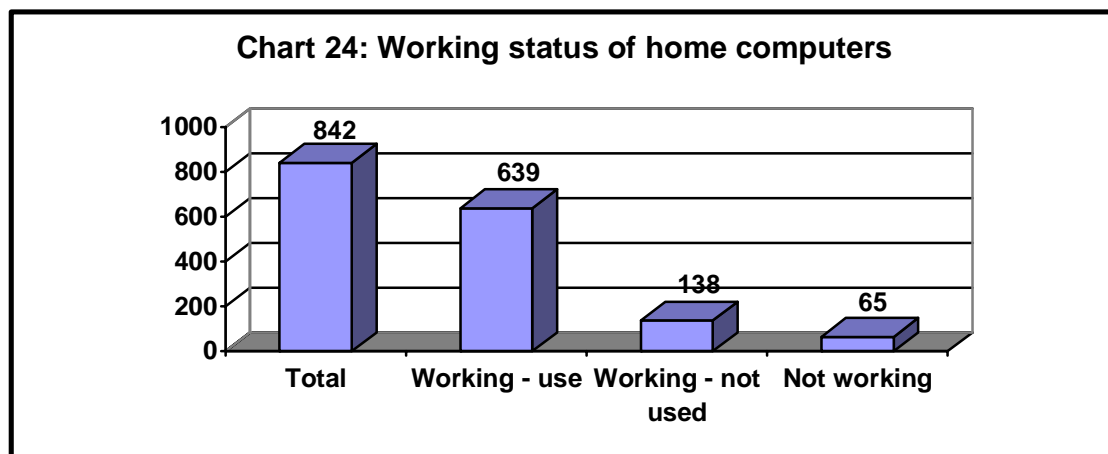


Observations:

The overwhelming majority of single computer households own a desktop computer. When there is a single computer in the home it's typically a desktop computer. Ninety-one percent of single computer households report that their lone computer is a desktop. The vast majority of these computers are reported as "working" computers. Multiple computer households are more likely to report that they have both a desktop and a laptop – one third report that they own a laptop.

Working status of home computers

The 555 respondents who participated in this survey reported that they had a total of 842 computers in their homes. Of these, the vast majority (639) are working and in use. Another 138 are in working condition but are unused and the remaining computers (65) are not in use.



Plans for the disposition of un-used and broken computers

The following table shows households' plans for their unused and broken computers. Respondents appear to have a variety of options for these redundant computers: recycling them, storing them, giving them away and, finally, some "other" plan.

Table 3: Households' plans for unused and broken computers²

	Un-used, computers (103)	Broken computers (49)	Totals (152)
Store	27%	18%	14%
Donate	15	4	11
Give away	18	8	14
Recycle	13	35	20
Trash	2	4	3
Salvage	8	18	11
Other	18	12	16

Observation:

Though only 3% went out in the trash, 16% were disposed of by 'other' means and 14% are being stored. As more and more computers reach their industry average three year life span, recycling computers could be a significant challenge.

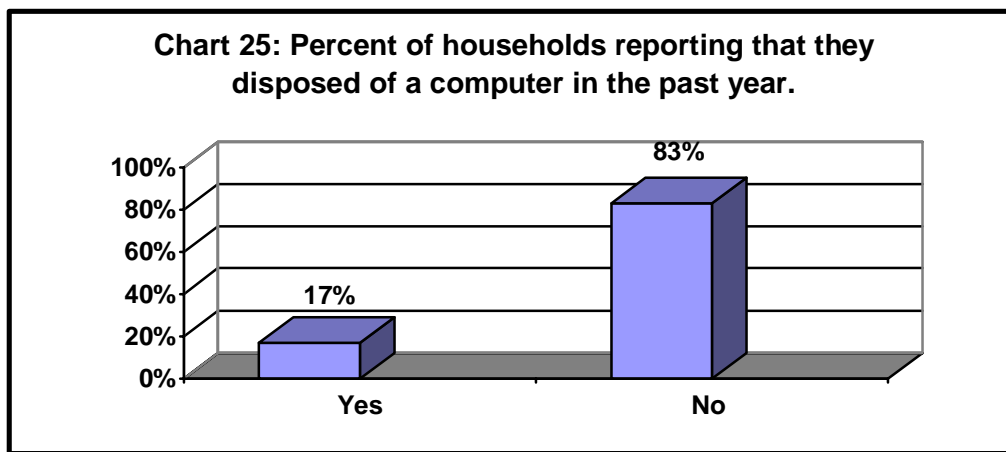
² Numbers for each column refer to the number of households – not to the number of computers within each household.

Disposing of home computers

Seventeen percent of the households surveyed report that they actually disposed of a computer in the twelve months preceding the survey.

Of those who disposed of a computer:

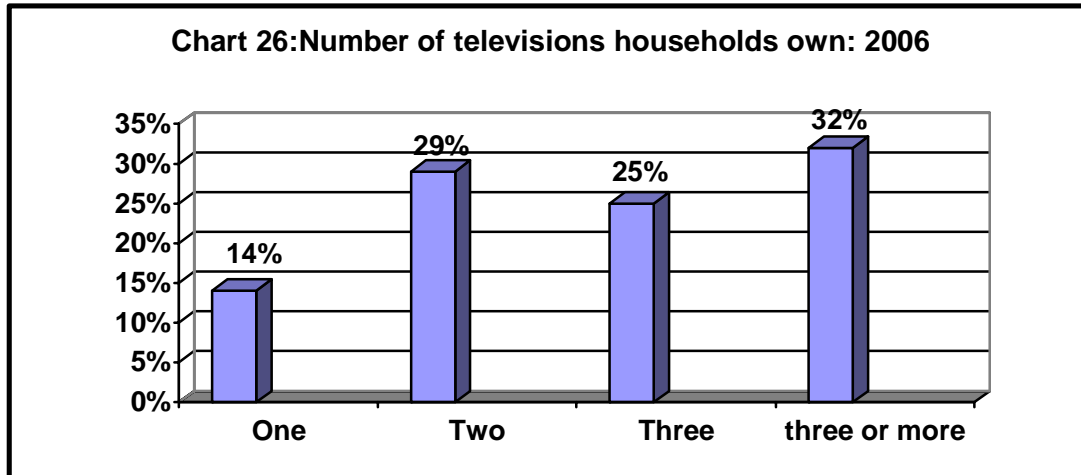
- Sixty-six percent gave it to friends, to charity or sold it
- Seventeen percent report that they recycled it
- Six percent put it in the trash
- Eleven percent other



Question: In the past twelve months have you thrown away, sold or otherwise removed one or more computers from your household?

Televisions in the home

The average household in Wisconsin has three television sets. Televisions are ubiquitous: only one person in this survey reported that they did NOT own one. Respondents report that the vast majority of these television sets are in use. Nearly four-fifths of the respondents (79%) report that all of their television sets are used.



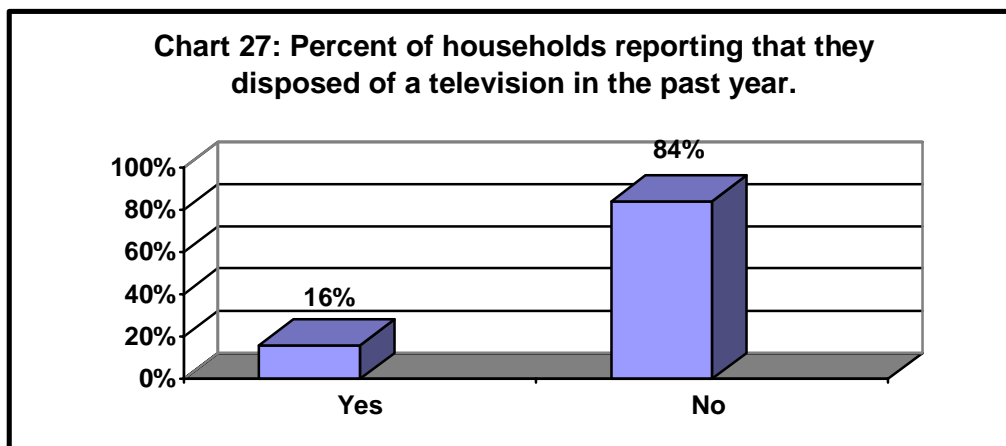
Question: How many televisions do you have in your home?

Disposing of televisions

Sixteen percent of the households surveyed report that they actually disposed of a television in the twelve months preceding the survey.

Of those who disposed of a television:

- Thirty percent gave it to friends or to charity
- Twelve percent report that they recycled it
- Twenty-eight percent put it in the trash
- Eleven percent sold it
- Nineteen percent did 'something else' or didn't know



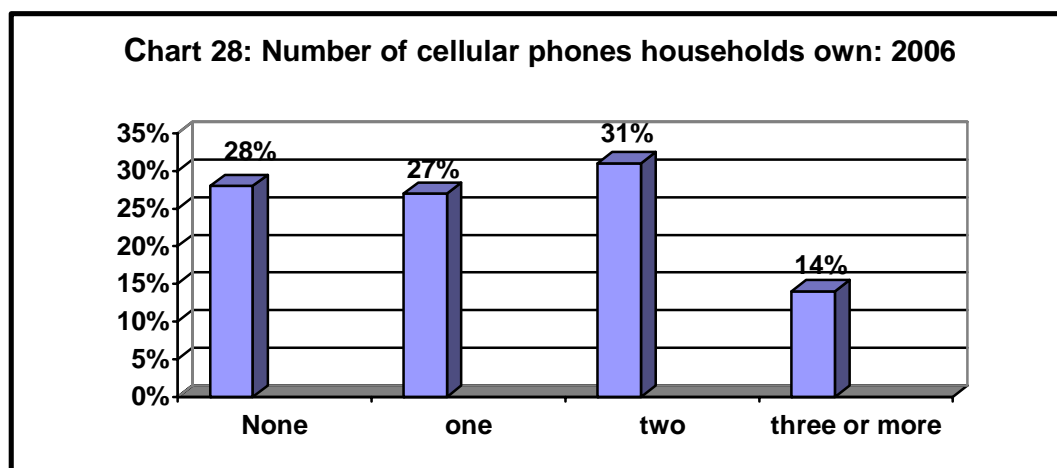
Question: How did you dispose of this television set?

Observation:

With Federal Communications Commission mandating digital TV in the near future, the number of TV's that will need to be recycled could be significant. This will be a challenge for the current recycling infrastructure.

Cellular phones in the home

The vast majority of Wisconsin's households have one or more cellular telephones. Seventy-two percent of the state's households report that they have one or more such phones. The average number of cellular phones per household: 1.4 phones.



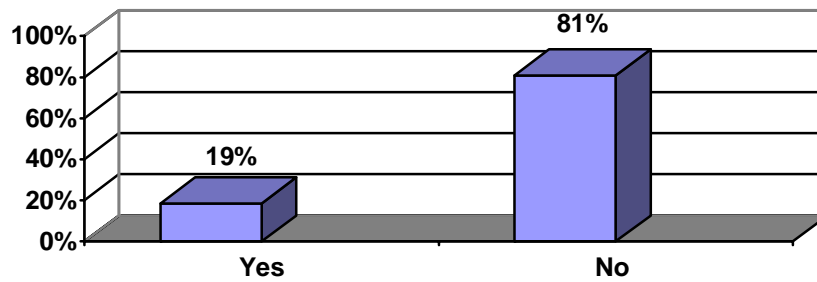
Disposing of cellular phones

Nearly one-fifth of all households (18.6 percent) reported disposing of one or more cell phones in the twelve months preceding the survey.

Of those who actually disposed of a cellular phone:

- Twenty-nine percent traded it in to a cell phone provider
- Fourteen percent recycled it
- Twenty-seven percent donated it to charity
- Nine percent put it in the trash
- Twenty-one percent sold it, gave it away or don't know

Chart 29: Percent of households reporting that they disposed of a cellular phone in the past year.



Question: How did you dispose of this cellular phone?

Observation:

Though a good recycling infrastructure exists for cell phones, nearly 30% were thrown away (9%) or discarded by 'other' (21%) means. That translates to 200,000 cell phones in Wisconsin each year. Given the continued consumer acceptance of cell phones, that number will only increase.

Appendix One

Respondent attribute	Percent owning a computer
Age	
18-30	90%
31-50	91
51-62	84
63 or older	54
Income	
Less than \$20,000	40%
\$20,000-\$35,000	65
\$35,000-\$50,000	85
\$50,000-\$75,000	95
\$75,000-\$100,000	96
\$100,000 or more	97
Gender	
Male	84%
Female	78
Education	
Grades 1-8	23%
Some high school	56
High school or GED	68
Vocational or technical school	88
Some college	89
College graduate or more	92
Employment	
Employed	89%
Retired	59
Home maker	88